Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A signal processing system for processing a signal having a plurality of signal ~~components, each of the plurality of signal components having a different format, the signal processing system~~ formats comprising:

an encoder capable of selectively encoding a first one of the plurality of signal ~~components having a first format~~ formats and generating encoded information;

a data pump capable of selectively demodulating a second one of the plurality of signal ~~components~~ formats and generating demodulated information, the second one of the plurality of signal formats ~~components~~ being modulated; and

a channel interface capable of selectively outputting onto a packet based network the encoded information and demodulated information.

2. (Cancelled)

3. (Previously Presented) The signal processing system of claim 1 wherein the second one of the plurality of signal components has a second format and wherein the second format comprises information modulated by a voiceband carrier.

4. (Original) The signal processing system of claim 1 wherein the encoded information comprises voice signals.

5.   (Original)   The signal processing system of claim 4 further comprising a voice activity detector which suppresses the voice signals without speech.

6.   (Previously Presented)   The signal processing system of claim 5 further comprising a comfort noise estimator which generates comfort noise parameters when the voice activity detector suppresses the voice signals, said comfort noise parameters being selectively outputted on the packet based network.

7.   (Original)   The signal processing system of claim 1 further comprising a decoder capable of decoding packets of information from the packet based network.

8.   (Original)   The signal processing system of claim 7 wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects the voice signals without speech, and a comfort noise generator which inserts comfort noise in place of the voice signals without speech.

9.   (Original)   The signal processing system of claim 8 further comprising a comfort noise estimator which generates comfort noise parameters from at least a portion of the voice signals without speech, the comfort noise generator being responsive to the comfort noise parameters.

10.   (Original)   The signal processing system of claim 7 wherein the information packets include voice signals, the

signal processing system further comprising a voice activity detector which detects lost voice signals, and a lost packet recovery engine which processes the voice signals to compensate for the lost voice signals.

11. (Original) The signal processing system of claim 1 further comprising a jitter buffer capable of receiving packets of information of varying delay from the packet based network and compensating for the delay variation of the information packets.

12. (Original) The signal processing system of claim 11 wherein the jitter buffer outputs an isochronous stream of the received information.

13. (Original) The signal processing system of claim 11 wherein the jitter buffer comprises a queue which buffers the received information for a holding time, and a voice synchronizer which adaptively adjusts the holding time of the queue.

14. (Currently Amended) A method of processing a signal having a plurality of signal ~~components, each of the plurality of signal components having a different format~~ formats, the method comprising:

selectively encoding a first one of the plurality of signal ~~components having a first format~~ formats to generate encoded information;

selectively demodulating a second one of the plurality of signal ~~components~~ formats to generate encoded information, the

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second one of the plurality of signal formats ~~components~~ being modulated; and

selectively outputting onto a packet based network the encoded information and the demodulated information.

15. (Cancelled)

16. (Previously Presented) The method of claim 14 wherein said second one of the plurality of signal components has a second format and wherein the second format comprises information modulated by a voiceband carrier.

17. (Previously Presented) The method of claim 14 wherein the encoded information includes voice signals.

18. (Original) The method of claim 17 further comprising suppressing the voice signals when the voice signals do not comprise speech.

19. (Original) The method of claim 18 wherein the suppression of the voice signals comprises generating comfort noise parameters in place thereof.

20. (Original) The method of claim 14 further comprising receiving information packets of varying delay from the packet based network, and compensating for the delay variation of the information packets.

21. (Original) The method of claim 20 wherein the information packet compensation comprises generating an isochronous stream of the information.

22. (Original). The method of claim 21 wherein the isochronous stream generation comprises adaptively buffering the information.

23. (Original) The method of claim 14 further comprising receiving packets of voice signals from the packet based network, identifying the received voice signals without speech, and inserting comfort noise in place of the identified voice signals without speech.

24. (Original) ` The method of claim 23 wherein the comfort noise insertion comprises estimating comfort noise in response to at least a portion of the received voice signals without speech.

25. (Original) The method of claim 14 further comprising receiving packets of voice signals from the packet based network, detecting lost voice signals, decoding the received voice signals, and processing the decoded voice signals to compensate for the lost voice signals.

26. (Currently Amended) A signal transmission system, comprising:
a first telephony device which outputs a first information signal having a first signal format;
a second telephony device which outputs a second information signal having a second signal format different from the first signal format, the second signal format being a modulated format;
a packet based network; and

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a signal processing system coupling the first and the second telephony devices to the packet based network, the signal processing system having an encoder which encodes the first information signal having the first signal format, and a channel interface which selectively outputs onto the packet based network the encoded information and a demodulated form of the second information signal.

27. (Cancelled)

28. (Original)   The signal processing system of claim 26 wherein the second format comprises information modulated by a voiceband carrier.

29. (Original)   The signal transmission system of claim 26 further comprising a switched circuit network coupling the first and the second telephony devices to the signal processing system.

30. (Original)   The signal transmission system of claim 29 wherein the switched circuit network comprises a public switching telephone network.

31. (Original)   The signal transmission system of claim 26 wherein the packet based network comprises internet protocol.

32. (Original)   The signal transmission system of claim 26 wherein the packet based network comprises frame relay.

33.   (Original)   The signal transmission system of claim 26 wherein the packet based network comprises aynchronous transfer mode.

34.   (Original)   The signal transmission system of claim 26 wherein the packet based network comprises a time division multiplexing network.

35.   (Original)   The signal transmission system of claim 26 wherein the first telephony device comprises a telephone.

36.   (Original)   The signal transmission system of claim 26 wherein the second telephony device comprises a fax.

37.   (Original)   The signal transmission system of claim 26 wherein the second telephony device comprises a modem.

38.   (Original)   The signal transmission system of claim 26 wherein the encoded information comprises voice signals.

39.   (Original)   The signal transmission system of claim 38 wherein the signal processing system further comprises a voice activity detector which suppresses the voice signals without speech.

40.   (Previously Presented)   The signal transmission system of claim 39 wherein the signal processing system further comprises a comfort noise estimator which generates comfort noise parameters when the voice activity detector suppresses the voice signals, said comfort noise parameters being selectively output on the packet based network.

41. (Original)   The signal transmission system of claim 26 wherein the signal processing system further comprising a decoder capable of decoding packets of information from the packet based network.

42. (Original)   The signal transmission system of claim 41 wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects the voice signals without speech, and a comfort noise generator which inserts comfort noise in place of the voice signals without speech.

43. (Original)   The signal transmission system of claim 42 wherein the signal processing system further comprises a comfort noise estimator which generates comfort noise parameters from at least a portion of the voice signals without speech, the comfort noise generator being responsive to the comfort noise parameters.

44. (Original)   The signal transmission system of claim 41 wherein the information packets include voice signals, the signal processing system further comprising a voice activity detector which detects lost voice signals, and a lost packet recovery engine which processes the voice signals to compensate for the lost voice signals.

45. (Original)   The signal transmission system of claim 26 wherein the signal processing system further comprises a jitter buffer capable of receiving packets of information of

varying delay from the packet based network and compensating for the delay variation of the information packets.

46. (Original) The signal transmission system of claim 45 wherein the jitter buffer outputs an isochronous stream of the received information.

47. (Original) The signal transmission system of claim 45 wherein the jitter buffer comprises a queue which buffers the received information for a holding time, and a voice synchronizer which adaptively adjusts the holding time of the queue.

48. (Currently Amended) A method of transmitting signals, comprising:

receiving a first information signal having a first signal format from a first telephony device via a communication medium;

receiving a second information signal having a second signal format from a second telephony device via the communication medium, the second signal format being a modulated format;

discriminating between the first information signal and the second information signal;

selectively encoding the first information signal;

selectively demodulating the second information signal; and

selectively outputting onto a packet based network the encoded information and demodulated information.

49. (Cancelled)

50. (Previously Presented) The method of claim 48 wherein the second format comprises information modulated by a voiceband carrier.

51. (Currently Amended) The method of claim 48 wherein the information having the first signal format is transmitted on a ~~a~~ switched circuit network.

52. (Original) The method of claim 51 wherein the switched circuit network comprises a public switching telephone network.

53. (Original) The method of claim 48 wherein the packet based network comprises internet protocol.

54. (Original) The method of claim 48 wherein the packet based network comprises frame relay.

55. (Original) The method of claim 48 wherein the packet based network comprises asynchronous transfer mode.

56. (Original) The method of claim 48 wherein the packet based network comprises a time division multiplexing network.

57. (Original) The method of claim 48 wherein the first telephony device comprises a telephone.

58. (Previously Presented) The method of claim 48 wherein the second telephony device comprises a fax.

59. (Currently Amended) The method of claim 48 ~~wherein~~ wherein the second telephony device comprises a modem.

60. (Previously Presented) The method of claim 48 wherein the first format comprises pulse code modulation.

61. (Previously Presented) The method of claim 48 wherein the second format comprises information modulated by a voiceband carrier.

62. (Original) The method of claim 48 wherein the discriminated information includes voice signals.

63. (Original) The method of claim 60 further comprising suppressing the voice signals when the voice signals do not comprise speech.

64. (Original) The method of claim 61 wherein the suppression of the voice signals comprises generating comfort noise parameters in place thereof.

65. (Original) The method of claim 48 further comprising receiving information packets of varying delay from the packet based network, and compensating for the delay variation of the information packets.

66. (Original) The method of claim 63 wherein the information packet compensation comprises generating an isochronous stream of the information.

67. (Original)   The method of claim 64 wherein the isochronous stream generation comprises adaptively buffering the information.

68. (Original)   The method of claim 48 further comprising receiving packets of voice signals from the packet based network, identifying the received voice signals without speech, and inserting comfort noise in place of the identified voice signals without speech.

69. (Original)   The method of claim 66 wherein the comfort noise insertion comprises estimating comfort noise in response to at least a portion of the received voice signals without speech.

70. (Original)   The method of claim 48 further comprising receiving packets of voice signals from the packet based network, detecting lost voice signals, decoding the received voice signals, and processing the decoded voice signals to compensate for the lost voice signals.

71. (Currently Amended) A signal processing system for processing a signal having a plurality of signal ~~components, each of the plurality of signal components having a different format, the signal processing system~~ formats comprising:

encoding means for selectively encoding a first one of the plurality of signal ~~components having a first format~~ formats and generating encoded information;

demodulating means for demodulating a second one of the plurality of signal ~~components of the plurality of signal~~

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~~components~~ <u>formats and generating demodulated information</u>, the second one of the plurality of signal <u>formats</u> ~~components~~ being modulated; and

channel interface means for selectively outputting onto a packet based network the encoded information and demodulated information.

72. (Cancelled)

73. (Previously Presented) The signal processing system of claim 71 wherein the second one of the plurality of signal components has a second format and wherein the second format comprises information modulated by a voiceband carrier.

74. (Previously Presented) The signal processing system of claim 71 wherein the encoded information comprises voice signals.

75. (Previously Presented) The signal processing system of claim 74 further comprising suppression means for suppressing the voice signals without speech.

76. (Previously Presented) The signal processing system of claim 75 further comprising means for generating comfort noise parameters when the suppression means suppresses the voice signals, said comfort noise parameters being selectively output onto the packet based network.

77. (Previously Presented) The signal processing system of claim 71 further comprising means for decoding packets of information from the packet based network.

78. (Previously Presented)   The signal processing system of claim 77 wherein the information packets include voice signals, the signal processing system further comprising means for detecting the voice signals without speech, and noise generation means for inserting comfort noise in place of the voice signals without speech.

79. (Previously Presented)   The signal processing system of claim 78 further comprising means for generating comfort noise parameters from at least a portion of the voice signals without speech, the noise generation means being responsive to the comfort noise parameters.

80. (Previously Presented)   The signal processing system of claim 77 wherein the information packets include voice signals, the signal processing system further comprising means for detecting lost voice signals, and means for processing the voice signals to compensate for the lost voice signals.

81. (Previously Presented)   The signal processing system of claim 71 further comprising compensation means for receiving packets of information of varying delay from the packet based network and compensating for the delay variation of the information packets.

82. (Previously Presented)   The signal processing system of claim 81 wherein the compensation means comprises queue means for buffering the received information for a holding time, and means for adaptively adjusting the holding time of the received information.

83. (Currently Amended) Computer-readable media embodying a program of instructions executable by a computer to perform a method of processing a signal having a plurality of signal ~~components, each of the plurality of signal components having a different format~~ formats, the method comprising:

selectively encoding a first one of the plurality of signal ~~components having a first format~~ formats to generate encoded information;

selectively demodulating a second one of the plurality of signal ~~components~~ formats to generate demodulated information, the second one of the plurality of signal formats ~~components~~ being modulated; and

selectively outputting onto a packet based network the encoded information and demodulated information.

84. (Cancelled)

85. (Previously Presented) The computer-readable media of claim 83 wherein the second one of the plurality of signal components has a second format and wherein the second format comprises information modulated by a voiceband carrier.

86. (Previously Presented) The computer-readable media of claim 83 wherein the extracted information includes voice signals.

87. (Previously Presented) The computer-readable media of claim 86 wherein the method further comprises suppressing the voice signals when the voice signals do not comprise speech.

88. (Previously Presented) The computer-readable media of claim 87 wherein the suppression of the voice signals comprises generating comfort noise parameters in place thereof.

89. (Previously Presented) The computer-readable media of claim 83 wherein the method further comprises receiving information packets of varying delay from the packet based network, and compensating for the delay variation of the information packets.

90. (Previously Presented) The computer-readable media of claim 89 wherein the information packet compensation comprises generating an isochronous stream of the information.

91. (Previously Presented) The computer-readable media of claim 90 wherein the isochronous stream generation comprises adaptively buffering the information.

92. (Previously Presented) The computer-readable media of claim 83 wherein the method further comprises receiving packets of voice signals from the packet based network, identifying the received voice signals without speech, and inserting comfort noise in place of the identified voice signals without speech.

93. (Previously Presented) The computer-readable media of claim 92 wherein the comfort noise insertion comprises estimating comfort noise in response to at least a portion of the received voice signals without speech.

94. (Previously Presented) The computer-readable media of claim 83 wherein the method further comprises receiving packets of voice signals from the packet based network, detecting lost voice signals, decoding the received voice signals, and processing the decoded voice signals to compensate for the lost voice signals.